CELL PHONE USE AND RELATED SYMPTOMS AMONG ADOLESCENTS: A SURVEY OF 2150 STUDENTS IN IZMIR, TURKEY

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Background and Aims: There is no large community-based study on cell phone (CP) use and symptom frequency in Turkey. Adolescents are an important risk group (Heinrich et al 2011). The aim of this study was to find out the CP use patterns and related symptom frequencies of high school students in Bornova.
Methods: All high school students in Bornova (20,493 students in 26 schools) comprised the target group of the survey. A sample size of 2530 students was calculated with p=50%, d=3%, design-effect=2 and 20% non-response. Systematic random sampling was applied to choose 87 classes out of 704, to obtain a cluster sample stratified according to schools. A 77-item questionnaire was applied. SAR values were obtained according to the model and brand of CP. 2150 students were included in the analyses. EMF magnitudes were measured at each school.
Results: The mean age of the participants was 15.6±1.3 and 52.2% were female. Among participants, 92.8%(n=1991) were using CP and 91.5%(n=1954) had his/her own CP. The ratio of CP users and owners significantly increased with increasing school grade (X^2 trend p<0.001 both). 14.0% had CPs with SAR>1.00W/kg, 53.9% had 1-4 calls/day, 4.6% had over 10 calls/day, the total duration of calls/day were <5min. for 29.0% and >30min for 11.7%, 27.3% sent/received ≥200 sms/day, 10.8% connected to the internet, 71.8% were registered to promotional campaigns. They were unaware of their CPs' SAR values and 64.1% never used earphones. Among the 23 symptoms surveyed, 21 increased with increasing call durations, 14 with number of calls, 13 with number of instant messages, 6 with increasing SAR values (X^2 trend p<0.05). Registration to campaigns significantly increased the presence of 12 symptoms (X^2 p<0.05).
Conclusions: CP ownership rate was high. Students mostly used their CPs for sms, a less risky attitude in terms of EMF exposure. Some students frequently spoke on their CPs. The use of earphones and other protective attitudes must be improved.

References:
Heinrich S, Thomas S, Heumann C, von Kries R and Radon K. The impact of exposure to radio frequency electromagnetic fields on chronic well-being in young people — A cross-sectional study based on personal dosimetry. Environ Int 2011;37:26–30.